

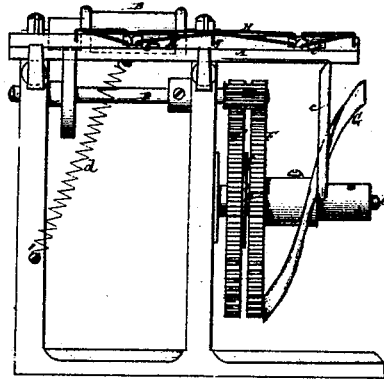
*J. E. Atwood,*

*Spooling Machine.*

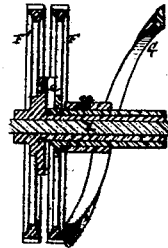
*No. 109708.*

*Patented Nov. 29. 1870.*

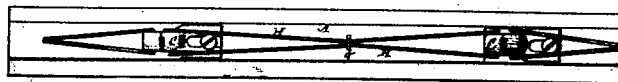
*Fig. 1.*



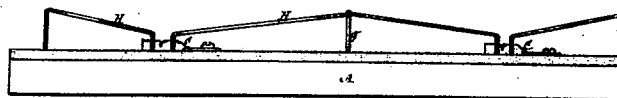
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



*Witnesses:*  
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*per Brown Coombes & Co.*  
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# United States Patent Office.

JOHN E. ATWOOD, OF MANSFIELD, CONNECTICUT.

Letters Patent No. 109,708, dated November 29, 1870.

## IMPROVEMENT IN TRAVERSE MOTIONS FOR WINDING AND SPOOLING MACHINERY.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN E. ATWOOD, of Mansfield, in the county of Tolland and State of Connecticut, have invented certain new and useful Improvements in Traverse Motions for Winding and Spooling Machinery, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a front elevation of my improved traverse motion as applied to a single spool or bobbin;

Figure 2, a sectional view of the mechanism, by which the traversing motion of the bar is effected and varied;

Figure 3 is a plan, on an enlarged scale, of the traverse bar, with its thread-conducting wires and guides;

Figure 4, a side view of the same; and

Figure 5, a transverse section thereof.

Figure 6 is a view, in perspective, of one of the thread-guides detached.

Similar letters of reference indicate corresponding parts.

My invention relates to transverse motions for winding and spooling machinery generally, including the winding of silk, cotton, or other thread, either on spools or in cops, for manufacturing or trade purposes.

The invention consists in certain substitutes or means for the eccentric motion heretofore in use, for varying, in a less complicated and in a more perfect or desirable manner, the range of the traverse bar to prevent the motion from commencing and terminating always in the same points, and piling up thread near the ends of the spool or coning-shaft, and to remedy all inaccuracies consequent on the wear of the machinery.

The invention also embraces a novel construction of the wire-conductors, which serve to direct the silk or thread to the guides on the traverse bar, whereby increased lightness is secured and a shield to the guides formed, to prevent the thread from catching under them.

The invention likewise includes a novel construction of the guides, the same combining lightness and cheapness, with facility of adjustment and a broad surface, which reduces wear.

By these improvements, also, or certain of them, increased lightness generally is secured to the traverse bar, which is an important consideration in machinery of the description referred to.

Referring to the accompanying drawing—

A represents a length or section of a traverse bar, and

B, one of a series of spools, on to which it is proposed to wind the silk or thread, as the latter is passed over either one of a series of guides, C, arranged on the traverse bar, and said bar reciprocated simultaneously with the rotation of the spools, as usual.

D is the driving-shaft, by which motion is communicated, through frictional gear or otherwise, to the spools, and which serves, also, to convey to the bar its necessary reciprocating action, as follows:

E is a pinion on the shaft D, which pinion gears with differential wheels F F', hung to rotate around a stud, *b*, independently of each other, for which purpose the one wheel may turn loosely on the stud, while the other wheel turns around a sleeve on the first.

The outer one, F, of these wheels, which may have either a greater or a lesser number of teeth in it than the other wheel, F', has connected with it the cam G, by which traverse motion is communicated to the bar A, through an arm, *c*, as against the reverse action of a spring, *d*.

To vary the range of the bar, not as regards its length, but as regards the points at which it or its thread-guide commences and terminates its stroke relatively to the spool to meet inaccuracies consequent on wear, and to prevent piling up thread near the ends of the spool and otherwise to vary the disposition of the thread over the face of the spool, the outer wheel F, which is kept in contiguity with the inner wheel F' by the spring *d*, or otherwise, has arranged on its inner face a projection, *e*, against which a cam or sloping-faced disk, *f*, on the contiguous face of the adjacent wheel F' acts to give a slight and gradual lateral motion to the operating-cam G by reason of the differential velocities of the wheels F and F', and which secures to the traverse bar the required change in its motion without altering its length of stroke.

The inclined wires H, which conduct the thread into or on to the guides C, are made double, as seen in figs. 1, 3, and 5 of the drawing, and are retained in shape and position by means of staples *g* and flattened interposed wires *h*.

This construction of the wire-conductors is lighter than a single wire arrangement and forms a shield to the guides C to prevent the thread from catching under the guides.

The guides C are also made light, and thus the traverse bar generally relieved of much weight, which is an important consideration.

These guides C furthermore combine cheapness with facility of adjustment and a broad surface for the thread, whereby they are prevented from being quickly worn, said guides being stamped or formed out of sheet metal, and of a hollow or partially rounded form for

the guiding portion of them, and a slotted flat base at their end for attachment to and adjustment on the traverse bar, as shown in figs. 1, 3, and 6 of the drawing.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the differential wheels F and F', furnished respectively with the projection *e* and cam *f*, the pinion E, and the cam G, with the traverse bar A, substantially as and for the purpose or purposes herein set forth.

2. The wire-conductors H, made double, in com-

bination with the staples *g* and flattened interposed wires *h*, essentially as shown and described.

3. The sheet-metal thread-guides C, constructed of a bent or hollow form, and with a flat slotted base or end, substantially as specified.

JOHN E. ATWOOD.

Witnesses:

EUGENE ATWOOD,  
ALFRED HARVEY.